

1653

03CO

TECH CENTER 1600/2900

SEP 16 2002

RECEIVED

p#6

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/863,901DATE: 12/31/2001
TIME: 11:53:48Input Set : A:\34950207.app
Output Set: N:\CRF3\12312001\I863901.raw

ENTERED

3 <110> APPLICANT: BAUBET, VALERIE
4 LE MOUPELLIC, HERVE
5 BRULET, PHILIPPE
7 <120> TITLE OF INVENTION: CHIMERIC GFP-AEQUORIN AS BIOLUMINESCENT Ca++ REPORTERS
8 AT THE SINGLE CELL LEVEL
10 <130> FILE REFERENCE: 03495-0207-00000
12 <140> CURRENT APPLICATION NUMBER: 09/863,901
13 <141> CURRENT FILING DATE: 2001-05-24
15 <150> PRIOR APPLICATION NUMBER: 60/208,314
16 <151> PRIOR FILING DATE: 2000-06-01
18 <150> PRIOR APPLICATION NUMBER: 60/210,526
19 <151> PRIOR FILING DATE: 2000-06-06
21 <150> PRIOR APPLICATION NUMBER: 60/255,111
22 <151> PRIOR FILING DATE: 2000-12-14
24 <160> NUMBER OF SEQ ID NOS: 48
26 <170> SOFTWARE: PatentIn Ver. 2.1
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 432
30 <212> TYPE: PRT
31 <213> ORGANISM: Aequorea victoria
33 <400> SEQUENCE: 1
34 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val
35 1 5 10 15
37 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
38 20 25 30
40 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
41 35 40 45
43 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
44 50 55 60
46 Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
47 65 70 75 80
49 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
50 85 90 95
52 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
53 100 105 110
55 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
56 115 120 125
58 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
59 130 135 140
61 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
62 145 150 155 160
64 Ile Lys Ala Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
65 165 170 175
67 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
68 180 185 190
70 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
71 195 200 205

RAW SEQUENCE LISTING

DATE: 12/31/2001

PATENT APPLICATION: US/09/863,901

TIME: 11:53:48

Input Set : A:\34950207.app

Output Set: N:\CRF3\12312001\I863901.raw

```

73 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
74      210                      215                      220
76 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ser Gly
77 225                      230                      235                      240
79 Leu Arg Ser Val Lys Leu Thr Ser Asp Phe Asp Asn Pro Arg Trp Ile
80      245                      250                      255
82 Gly Arg His Lys His Met Phe Asn Phe Leu Asp Val Asn His Asn Gly
83      260                      265                      270
85 Lys Ile Ser Leu Asp Glu Met Val Tyr Lys Ala Ser Asp Ile Val Ile
86      275                      280                      285
88 Asn Asn Leu Gly Ala Thr Pro Glu Gln Ala Lys Arg His Lys Asp Ala
89      290                      295                      300
91 Val Glu Ala Phe Phe Gly Gly Ala Gly Met Lys Tyr Gly Val Glu Thr
92 305                      310                      315                      320
94 Asp Trp Pro Ala Tyr Ile Glu Gly Trp Lys Lys Leu Ala Thr Asp Glu
95      325                      330                      335
97 Leu Glu Lys Tyr Ala Lys Asn Glu Pro Thr Leu Ile Arg Ile Trp Gly
98      340                      345                      350
100 Asp Ala Leu Phe Asp Ile Val Asp Lys Asp Gln Asn Gly Ala Ile Thr
101      355                      360                      365
103 Leu Asp Glu Trp Lys Ala Tyr Thr Lys Ala Ala Gly Ile Ile Gln Ser
104      370                      375                      380
106 Ser Glu Asp Cys Glu Glu Thr Phe Arg Val Cys Asp Ile Asp Glu Ser
107 385                      390                      395                      400
109 Gly Gln Leu Asp Val Asp Glu Met Thr Arg Gln His Leu Gly Phe Trp
110      405                      410                      415
112 Tyr Thr Met Asp Pro Ala Cys Glu Lys Leu Tyr Gly Gly Ala Val Pro
113      420                      425                      430
116 <210> SEQ ID NO: 2
117 <211> LENGTH: 441
118 <212> TYPE: PRT
119 <213> ORGANISM: Aequorea victoria
121 <400> SEQUENCE: 2
122 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val
123 1      5      10      15
125 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
126      20      25      30
128 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
129      35      40      45
131 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
132      50      55      60
134 Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
135 65      70      75      80
137 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
138      85      90      95
140 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
141      100     105     110
143 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
144      115     120     125

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/863,901

DATE: 12/31/2001

TIME: 11:53:48

Input Set : A:\34950207.app

Output Set: N:\CRF3\12312001\I863901.raw

```

146 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
147      130      135      140
149 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
150 145      150      155      160
152 Ile Lys Ala Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
153      165      170      175
155 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
156      180      185      190
158 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
159      195      200      205
161 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
162      210      215      220
164 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ser Gly
165 225      230      235      240
167 Gly Ser Gly Ser Gly Gly Gln Ser Gly Leu Arg Ser Val Lys Leu Thr
168      245      250      255
170 Ser Asp Phe Asp Asn Pro Arg Trp Ile Gly Arg His Lys His Met Phe
171      260      265      270
173 Asn Phe Leu Asp Val Asn His Asn Gly Lys Ile Ser Leu Asp Glu Met
174      275      280      285
176 Val Tyr Lys Ala Ser Asp Ile Val Ile Asn Asn Leu Gly Ala Thr Pro
177      290      295      300
179 Glu Gln Ala Lys Arg His Lys Asp Ala Val Glu Ala Phe Phe Gly Gly
180 305      310      315      320
182 Ala Gly Met Lys Tyr Gly Val Glu Thr Asp Trp Pro Ala Tyr Ile Glu
183      325      330      335
185 Gly Trp Lys Lys Leu Ala Thr Asp Glu Leu Glu Lys Tyr Ala Lys Asn
186      340      345      350
188 Glu Pro Thr Leu Ile Arg Ile Trp Gly Asp Ala Leu Phe Asp Ile Val
189      355      360      365
191 Asp Lys Asp Gln Asn Gly Ala Ile Thr Leu Asp Glu Trp Lys Ala Tyr
192      370      375      380
194 Thr Lys Ala Ala Gly Ile Ile Gln Ser Ser Glu Asp Cys Glu Glu Thr
195 385      390      395      400
197 Phe Arg Val Cys Asp Ile Asp Glu Ser Gly Gln Leu Asp Val Asp Glu
198      405      410      415
200 Met Thr Arg Gln His Leu Gly Phe Trp Tyr Thr Met Asp Pro Ala Cys
201      420      425      430
203 Glu Lys Leu Tyr Gly Gly Ala Val Pro
204      435      440
207 <210> SEQ ID NO: 3
208 <211> LENGTH: 450
209 <212> TYPE: PRT
210 <213> ORGANISM: Aequorea victoria
212 <400> SEQUENCE: 3
213 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val
214 1      5      10      15
216 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
217      20      25      30

```

RAW SEQUENCE LISTING

DATE: 12/31/2001

PATENT APPLICATION: US/09/863,901

TIME: 11:53:48

Input Set : A:\34950207.app

Output Set: N:\CRF3\12312001\I863901.raw

```

219 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
220      35      40      45
222 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
223      50      55      60
225 Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
226 65      70      75      80
228 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
229      85      90      95
231 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
232      100     105     110
234 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
235      115     120     125
237 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
238      130     135     140
240 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
241 145     150     155     160
243 Ile Lys Ala Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
244      165     170     175
246 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
247      180     185     190
249 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
250      195     200     205
252 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Glu Phe Val
253      210     215     220
255 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ser Gly
256 225     230     235     240
258 Gly Ser Gly Ser Gly Gly Gln Ser Gly Gly Ser Gly Ser Gly Gln
259      245     250     255
261 Ser Gly Leu Arg Ser Val Lys Leu Thr Ser Asp Phe Asp Asn Pro Arg
262      260     265     270
264 Trp Ile Gly Arg His Lys His Met Phe Asn Phe Leu Asp Val Asn His
265      275     280     285
267 Asn Gly Lys Ile Ser Leu Asp Glu Met Val Tyr Lys Ala Ser Asp Ile
268      290     295     300
270 Val Ile Asn Asn Leu Gly Ala Thr Pro Glu Gln Ala Lys Arg His Lys
271 305     310     315     320
273 Asp Ala Val Glu Ala Phe Phe Gly Gly Ala Gly Met Lys Tyr Gly Val
274      325     330     335
276 Glu Thr Asp Trp Pro Ala Tyr Ile Glu Gly Trp Lys Lys Leu Ala Thr
277      340     345     350
279 Asp Glu Leu Glu Lys Tyr Ala Lys Asn Glu Pro Thr Leu Ile Arg Ile
280      355     360     365
282 Trp Gly Asp Ala Leu Phe Asp Ile Val Asp Lys Asp Gln Asn Gly Ala
283      370     375     380
285 Ile Thr Leu Asp Glu Trp Lys Ala Tyr Thr Lys Ala Ala Gly Ile Ile
286 385     390     395     400
288 Gln Ser Ser Glu Asp Cys Glu Glu Thr Phe Arg Val Cys Asp Ile Asp
289      405     410     415
291 Glu Ser Gly Gln Leu Asp Val Asp Glu Met Thr Arg Gln His Leu Gly

```

RAW SEQUENCE LISTING

DATE: 12/31/2001

PATENT APPLICATION: US/09/863,901

TIME: 11:53:48

Input Set : A:\34950207.app

Output Set: N:\CRF3\12312001\I863901.raw

```

292          420          425          430
294 Phe Trp Tyr Thr Met Asp Pro Ala Cys Glu Lys Leu Tyr Gly Gly Ala
295          435          440          445
297 Val Pro
298          450
301 <210> SEQ ID NO: 4
302 <211> LENGTH: 468
303 <212> TYPE: PRT
304 <213> ORGANISM: Aequorea victoria
306 <400> SEQUENCE: 4
307 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val
308 1 5 10 15
310 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
311 20 25 30
313 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
314 35 40 45
316 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
317 50 55 60
319 Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
320 65 70 75 80
322 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
323 85 90 95
325 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
326 100 105 110
328 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
329 115 120 125
331 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
332 130 135 140
334 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
335 145 150 155 160
337 Ile Lys Ala Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
338 165 170 175
340 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
341 180 185 190
343 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
344 195 200 205
346 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
347 210 215 220
349 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys Ser Gly
350 225 230 235 240
352 Gly Ser Gly Ser Gly Gln Ser Gly Gly Ser Gly Ser Gly Gly Gln
353 245 250 255
355 Ser Gly Gly Ser Gly Ser Gly Gly Gln Ser Gly Gly Ser Gly Ser Gly
356 260 265 270
358 Gly Gln Ser Gly Leu Arg Ser Val Lys Leu Thr Ser Asp Phe Asp Asn
359 275 280 285
361 Pro Arg Trp Ile Gly Arg His Lys His Met Phe Asn Phe Leu Asp Val
362 290 295 300
364 Asn His Asn Gly Lys Ile Ser Leu Asp Glu Met Val Tyr Lys Ala Ser

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/863,901

DATE: 12/31/2001

TIME: 11:53:49

Input Set : A:\34950207.app

Output Set: N:\CRF3\12312001\I863901.raw